

LUKOVNIKOVA, G.A., kand. biol. nauk; KOZLOVA, G.S.; LUKOVNIKOVA, M.A.

Chemical composition of potatoes and cabbage of different varieties
in the various districts of Leningrad Province. Trudy po prikl. bot.,
gen. i sel. 37 no. 12130-137 '65 (MIRA 1951)

LUKOVNIKOVA, G.A., kand. biol. nauk

Effect of fertilizers on the chemical composition of tubers
of different potato varieties. Trudy po prikl. bot., gen. i
sel. 37 no. 1:138-146 '65 (MIRA 19:1)

STUPOV, Aleksey Dmitriyevich: Prinimala uchastiye LUKOVNIKOVA, S.V.,
kand.sel'skokhoz.nauk, mladshiy nauchnyy sotrudnik; KANEVSKAYA,
T.M., red.; GERASIMOVA, Ye.S., tekhn.red.

[Development of socialist agriculture in Bulgaria] Razvitie
sotsialisticheskogo sel'skogo khoziasitva v Bolgarii. Moskva,
Gosplanizdat, 1960. 273 p. (MIRA 14:3)

1. Sektor ekonomiki stran narodnoy demokratii Inatituta ekonomiki
Akademii nauk SSSR (for Lukovnikova).
(Bulgaria--Agriculture, Cooperative)

STORozHEV, V.I.; KORKUNOV, I.N.; RUDAKOV, Ye.V.; MELLINYY, S.A.;
LUKOVNIKOVA, S.V.; POTAPOV, Kh.Ye.; ZAKUSILO, P.S.;
ZAVERENYAYEVA, L.V., red.; GERASIMOVA, Ye.S., tekhn. red.

[Triumph of the Lenin cooperative plan in socialist
countries] Pobeda leninskogo kooperativnogo plana v stra-
nakh sotsializma. Moskva, Izd-vo ekon. lit-ry, 1963. 274 p.
(MIRA 16:4)

1. Akademiya nauk SSSR. Institut ekonomiki mirovoy sotsiali-
sticheskoy sistemy.

(Europe, Eastern--Agriculture, Cooperative)
(Collective farms)

IX
LUKOVNIKOVA, Ye. V. Cand Agr Sci -- (diss) "Improving the Gor'kiy
Breed of Sheep ^{by Evaluation of Sires According to} ~~Through Verifying the~~ Progeny of the Brood Stock
by Line ^{and the} ~~Breeding Along the Lines.~~" Gor'kiy, 1957. 19 pp 20 cm.

(Min of Agriculture, Gor'kiy Agricultural Inst), 100 copies

(KL, 26-57, 110)

LUKOVSKAYA, K. A.

✓ Effect of different concentrations of caffeine and adrenaline on the cardiac and respiratory systems and the interrelation of these drugs in rabbits. V. A. Pegel, Z. M. Silant'eva, and K. A. Lukovskaya. *Trudy Tomsk. Univ.* 123, 189-58(1963); *Priroda. Zhur. Khim.* 1954, No. 41-643. — The optimal dose of caffeine (I) for rabbits is 1.5 ml. of a 6-8% soln.; the optimal dose of adrenaline (II) seems to be the concn. of II which is normally found in blood. Interrelation between I and II in the effect on the cardiac and respiratory systems of the organism is discussed.

E. Wierbicki

(2)

LUKOVSKAYA, N. M., BABKO, A. K.

"Effect of Complexating Agents on the Catalysis of a Chemiluminescence Reaction"

submitted at the Conference on Kinetic Methods of Analysis, Ivanovo,
14-16 June 1960

So: Izvestiya Vysshikh Uchebnykh Zavedeniy SSSR, Khimiya i Khimicheskaya
Technologiya, Vol III, No 6 Ivanovo, 1960, pages 1113-1116.

BAEKO, A.K.; LUKOVSKAYA, N.M.

Chemiluminescent catalytic reaction in the system luminol -
copper - hydrogen peroxide. Part 1: Physicochemical analysis.
Ukr. khim. zhur. 27 no.4:519-524 '61. (MIRA 14:7)

1. Institut obshchey i neorganicheskoy khimii AN USSR.
(Luminol) (Copper) (Hydrogen peroxide)

BABKO, A.K.; LUKOVSKAYA, N.M.

Photographic chemiluminescence method for the determination of
microquantities of copper and hydrogen peroxide. Zhur.anal.khim.
17 no.1:50-52 Ja-F '62. (MIRA 15:2)

1. Institute of General and Inorganic Chemistry, Academy of Sciences,
Ukrainian S.S.R., Kiev.

(Copper--Analysis) (Hydrogen peroxide)

S/073/62/028/007/004/004
E075/E136

AUTHORS: Babko, A.K., and Lukovskaya, N.M.

TITLE: Investigation of chemiluminescent catalytic reaction in the system luminol-copper-hydrogen peroxide. Part II. Photoelectric method for the study of the influence of copper concentration

PERIODICAL: Ukrainskiy khimicheskii zhurnal, v.28, no.7, 1962, 861-865.

TEXT: To obtain data on the glow-time distribution and maximum glow intensity ($I_{\max}$) in the system luminol-Cu-H₂O₂, containing different concentrations of Cu and H₂O₂, an automatic apparatus was constructed using a photomultiplier and a recorder. The chemical reaction was conducted at a constant pH = 11.2 with various amounts of 0.001 M CuSO₄. The glow begins immediately after addition of H₂O₂ to the solution and the initial glow does not shift with time for different concentrations of Cu (1.43 x 10⁻⁵ to 14.3 x 10⁻⁵ M). $I_{\max}$ passes through a maximum for each Cu concentration, the latter being proportional to $I_{\max}$

Card 1/2

Investigation of chemiluminescent ...

S/073/62/028/007/004/004
E075/E136

for $[Cu] < [H_2O_2]$ (2.3×10^{-5} M). If $[Cu]$ is 2 to 3 times greater than $[H_2O_2]$, the chemiluminescent effect begins to decrease. The dependence of I_{max} and the total intensity of light emitted Σ on the general concentration of Cu for different H_2O_2 concentrations was also investigated. The chemiluminescent determination of H_2O_2 can be achieved for the $[Cu]$ concentration not greater than 2.3×10^{-5} M. At $[Cu]$ of the order of 10^{-4} M the determination is not possible. The determination of Cu can be achieved with a considerably improved sensitivity (up to 2×10^{-8} g Cu per ml) by increasing the concentration of H_2O_2 from 2×10^{-5} to 7.5×10^{-4} M. There are 6 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR
(Institute of General and Inorganic Chemistry,
AS Ukr SSR)

SUBMITTED: June 5, 1961.

Card 2/2

BABKO, A.K.; LUKOVSKAYA, N.M.

Chemiluminescent catalytic reaction in the system luminol - copper - hydrogen peroxide. Part 3: Photoelectric method of studying the effect of pH and ammonia concentration. Ukr.khim.zhur. 28 no.8:968-972 '62. (MIRA 15:11)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.
(Luminescence)
(Hydrogen-ion concentration)
(Systems (Chemistry))

BABKO, A.K.; LUKOVSKAYA, N.M.

Chemiluminescent determination of trace amounts of cobalt. *Zav.lab.*
29 no.4:404-407 '63. (MIRA 16:5)

1. Institut obshehey i neorganicheskoy khimii AN UkrSSR.
(Cobalt--Analysis) (Luminescence)

ACCESSION NR: AP4033701

S/0073/64/030/004/0388/0390

AUTHOR: Babko, A. K.; Lukovskaya, N. M.

TITLE: Chemiluminescent determination of cobalt in high purity zinc.

SOURCE: Ukrainskiy khimicheskii zhurnal, v. 30, no. 4, 1964, 388-390

TOPIC TAGS: cobalt, chemiluminescent determination, high purity zinc, phenolphthalein, photographic chemiluminescent analysis

ABSTRACT: A method was worked out for determining 10^{-6} - $10^{-7}\%$ cobalt in high purity zinc. $3 \times 10^{-4}\%$ and more cobalt in $ZnSO_4$ may be determined without separating the zinc. In this case sodium salicylate is added to mask the Fe and Cu in the solution to be analysed, luminol is added, and an isoorthochromatic photographic plate is exposed to cells of the solution in the dark. The plate is developed and read with a photometer, and visually compared with standards. With smaller amounts of cobalt an analytical concentrate must be prepared. This is effected by precipitation with α -nitroso- β -naphthol, with phenolphthalein as additional carrier, and combustion of the precipitate in the presence of a small amount of zinc salt. This cobalt concentrate is then determined by the photographic

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ACCESSION NR: AP4033701

chemiluminescent method. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN UkrSSR (Institute of General and Inorganic Chemistry AN UkrSSR)

SUBMITTED: 15 May 63

ENCL: 00

SUB CODE: OP, MM

NO REF SOV: 002

OTHER: 002

Card 2/2

BABKO, A.K.; LUKOVSKAYA, N.M.

Catalytic activity of cobalt of cobalt in chemiluminescence.
Ukr.khim.zhur. 30 no.5:508-514 '64. (MIRA 18:2)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

L 14685-66 EWT(m)/EWP(t)/EWP(b) LJP(c) JD/JG
ACC NR: AP6005882 (A) SOURCE CODE: UR/0075/65/020/010/1100/1105

AUTHOR: Babko, A. K.; Lukovskaya, N. M. 56
B

ORG: Institute of General and Inorganic Chemistry, AN UkrSSR, Kiev (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

TITLE: Chemiluminescent determination of microquantities of vanadium 27

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 10, 1965, 1100-1105

TOPIC TAGS: vanadium, chemiluminescence, cobalt, hydrogen peroxide, trace analysis, luminescence quenching, catalysis

ABSTRACT: Vanadium (V) quenches the chemiluminescence of luminol with hydrogen peroxide in the presence of catalysts, e. g., cobalt (III). In order to develop a method of determining vanadium by a photographic chemiluminescent technique, the effect of vanadium (V) on chemiluminescence in the luminol (L)-Co(III)-H₂O₂ system was investigated. The quenching of luminescence by vanadium was found to be due to the formation of peroxides of vanadium (V) in alkaline media and a quantitative determination of vanadium (V) based on the chemiluminescence of H₂O₂ not combined

UDC: 543.70

Card 1/2

L 14685-66
ACC NR: AP6005882

with vanadium was carried out. The sensitivity of the determination was $2 \cdot 10^{-8}$ g V per ml. The method of determining H_2O_2 was improved by using the sale



as the catalyst, which raised the sensitivity of the determination to $2 \cdot 10^{-9}$ g H_2O_2 per ml, i. e., by a factor of 100. Orig. art. has: 8 figures, 1 table.

SUB CODE: 07/

SUBM DATE: 11Jun64/

ORIG REF: 003/

OTH REF: 004

Card 2/2 *AC*

LUKOVSKAYA, N. V.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Metallurgy and Metallography

③

Investigation of the phenomenon of reversion during aging of duralumin. M. I. Zakharova and N. V. Lukovskaya. Uchenye Zapiski Akad. Gosudarst. Vuzov. M. V. Lomonosova No. 134, Fiz., No. 5, 107-12 (1949).
Specimens of alloy contg. Cu 3.83, Mn 0.77, Mg 0.82, Si 0.60, Fe 0.00%, and balance Al were quenched from 500° and aged at (1) 100° for 0 hrs., (2) 150° for 2 hrs., (3) 200° for 5, 20, or 45 min., or (4) 218° for 1, 5, or 30 min. Specimens from (1) and (2) were then heated at 235, 255, or 275° for periods up to 1 hr., and the Rockwell hardness was detd.; specimens from (3) and (4) were heated at 275° for periods up to 1 hr. and tested. In (1) and (2), the hardness decreased after a short heating period to approx. the hardness of the quenched alloy, then increased to a max. and decreased again. In (3) and (4), heating at 275° resulted in reversion of the alloy to the quenched hardness only if aging was limited to a very short period (1-5 min.). H. W. R.

LUKOVSKIY, I. A.

28712

S/021/61/000/008/007/011
D210/D303

24.4300

AUTHOR: Lukovs'kiy, I. A.

TITLE: Small wave motions of homogeneous incompressible liquid in vessels having the form of a body of revolution

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 8, 1961, 1013-1017

TEXT: The system of coordinates is so chosen that the plane Oyz coincides with the undisturbed surface of the liquid and the axis Oz is the symmetry axis of the vessel. The initial conditions are the form of surface of liquid and the distribution of velocities on it at $t = 0$. The displacement potential of wave motion (non-vortex) is supposed to have the series form

$$\phi(x, y, z, t) = \sum_{n=1}^{\infty} r_n(t) \varphi_n(x, y, z) \quad (4)$$

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D210/D303

Small wave motions ...

$\varphi_n(x, y, z)$ being a system of functions harmonical within the volume Q , occupied by the liquid, orthogonal on the plane Σ and satisfying the conditions

$$\frac{\partial \varphi_n}{\partial \nu} = 0 \quad \text{on } S \text{ (walls of vessel)}$$

(5)

$$\frac{\partial \varphi_n}{\partial \nu} = \lambda_n \varphi_n \quad \text{on } \Sigma \text{ (this time - free surface of liquid)}$$

derivatives with respect to the normal surface - λ_n are positive integers. The author finds a particular solution of wave equations (R is distance to point O , θ the polar angle, η the longitude)

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D210/D303

Small wave motions ...

$$\varphi_n(R, \theta, \eta) = (\alpha_n \cos \eta + \beta_n \sin \eta) \psi_n(R, \theta) \quad (11)$$

and obtains $\alpha_n = \beta_n = 1$ from his normalizing condition. The system of functions φ_n consists of the following sub-systems, because of rotational symmetry:

$$\begin{aligned} \varphi_{rn} &= \psi_n(x, y) \cos \eta; \\ \varphi_{pn} &= \psi_n(x, y) \sin \eta; \quad \varphi_{qn} = 0 \end{aligned}$$

The functions ψ_n are to be determined from the equation and the boundary conditions

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✓

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D210/D303

Small wave motions ...

$$\frac{\partial}{\partial x} \left(y \frac{\partial \psi}{\partial x} \right) + \frac{\partial}{\partial y} \left(y \frac{\partial \psi}{\partial y} \right) - \frac{1}{y} \psi = 0 \quad (13)$$

$$\frac{\partial \psi}{\partial v} = \lambda \psi \quad \text{on } L_1$$

$$\frac{\partial \psi}{\partial v} = 0 \quad \text{on } L \quad (14)$$

$$\psi = 0 \quad \text{on } L_0$$

L_1 and L are respectively lines of intersection of Oxy with Σ and S , L_0 is the line $y=0$. The problem of solving (13) is reduced to the variational problem

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D210/D303

Small wave motions

$$/(\psi) = \iint_G \left[y(\psi_x^2 + \psi_y^2) + \frac{1}{y} \psi^2 \right] dx dy - \lambda \int_{L_1} y \psi^2 ds \quad (15)$$

ds being the line element (in this paper, the "arc length") of the contour $L_0 + L_1 + l$. The author states that he uses Trefez's method to solve the equation. (13) is written in spherical co-ordinates

$$\sin^2 \theta \frac{\partial}{\partial R} \left(R^2 \frac{\partial \psi}{\partial R} \right) + \sin \theta \frac{\partial}{\partial \theta} \left(\sin \theta \frac{\partial \psi}{\partial \theta} \right) - \psi = 0 \quad (17)$$

and the solution is then

$$\psi = \sum_{k=1}^n \alpha_k R^k \vartheta_k^{(1)} \quad (18)$$

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D210/D303

Small wave motions ...

$\varphi_k^{(1)}$ being spherical functions of the first kind and α_k are constants to be determined from the condition that $\psi(x,y)$ should give a minimum value of the functional $I(\psi)$, i.e. from the system of algebraical equations

$$\int_{L_1} y \left(\frac{\partial \psi}{\partial v} - \lambda \psi \right) w_i ds + \int_1 y \frac{\partial \psi}{\partial v} w_i ds = 0 \quad (21)$$

(i = 1, 2, ..., n)

(w_i are equal to $R^i \varphi_i^{(1)}$ expressed in terms of x, y). When the eigenfunctions $\psi_n(x, y)$ are found one can determine the potential of displacements and the form of the free surface of the liquid. The authors thanks S. F. Feshchenko and B. I. Rabinovich for proposing

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Small wave motions ...

S/021/61/000/008/007/011
D210/D303

the problem and for valuable suggestions. There are 5 Soviet-bloc references.

ASSOCIATION: Instytut matematyky AN URSR (Institute of Mathematics, AS UkrSSR)

PRESENTED: by Academician AS UkrSSR, H.M. Savin

SUBMITTED: February 16, 1961

X

Card 7/7

21356
S/021/61/000/011/003/011
D299/D304

26.2145

AUTHOR: Lukovs'ky, I. A.

TITLE: Disturbed motion of a heavy body having a spherical container, partly filled with liquid

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi, no. 11, 1961, 1418-1422

TEXT: The harmonic function which characterizes the free surface of the liquid, is found by an approximate method. The equations were derived by B. I. Rabinovich's method (Ref. 4: PMM, 20, 29, 1956). Assume the container is filled by an ideal liquid and the system of coordinates Oxyz is fixed to the body. The disturbed motion involves the motion of the system Oxyz with respect to another system O*x*y*z*. With the ordinary assumption for such a type of problem, the motion of the liquid will be a potential motion. For the displacement potential Φ , the equation

$$\vec{u} = \nabla \Phi, \quad \Delta \Phi = 0 \quad (1)$$

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Disturbed motion of ...

holds; the potential is sought in the form

$$\begin{aligned} \Phi(x, y, z, t) = & \sum_{k=1}^5 u_k(t) \Phi_k(x, y, z) + \sum_{k=4}^5 u_k^0(t) \Phi^0(x, y, z) + \\ & + \sum_{n=1}^{\infty} r_n(t) \varphi_n(x, y, z) \end{aligned} \quad (2)$$

where $r_n(t)$ are the expansion coefficients of the harmonic function which characterizes the disturbed free surface of the liquid. The system of functions φ_n decomposes into two subsystems:

$$\varphi_{rn} = \Psi_n(R, \theta) \cos \eta, \quad \varphi_{pn} = \Psi_n(R, \theta) \sin \eta, \quad \varphi_{qn} = 0 \quad (8)$$

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Disturbed motion of ...

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The functions ψ_n are determined from the boundary value problem

$$\sin^2 \theta \frac{\partial}{\partial R} \left[R^2 \frac{\partial \psi(R, \theta)}{\partial R} \right] + \sin \theta \frac{\partial}{\partial \theta} \left[\sin \theta \frac{\partial \psi(R, \theta)}{\partial \theta} \right] - \psi(R, \theta) = 0, \quad (9)$$

$$\left[\cos \theta \frac{\partial \psi(R, \theta)}{\partial R} - \frac{\sin \theta}{R} \frac{\partial \psi(R, \theta)}{\partial \theta} \right]_{L_1} = \lambda [\psi(R, \theta)]_{L_1}, \quad (10)$$

where R is the length of the radius-vector of the liquid particles with respect to the center of the sphere, L_1 and L are the lines of intersection between the Oxyz plane and the Σ and S surface respectively. Problems (9) (10) can be reduced to a variational problem. Among the allowed functions, those functions are sought which minimize the functional

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Disturbed motion of ...

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$$I(\psi) = \int_{\theta_0}^{\pi} \int_{-\frac{a}{\cos \theta}}^{R_0} \left[R^2 \sin \theta \psi_R^2 + \sin \theta \psi_\theta^2 + \frac{1}{\sin \theta} \psi^2 \right] dR d\theta +$$

$$+ \lambda a^2 \int_{\theta_0}^{\pi} \frac{\sin \theta}{\cos^3 \theta} \psi^2 d\theta.$$

where
 $\theta_0 = \arccos\left(-\frac{a}{R_0}\right)$

(11)

The solution to Eq. (9) is sought in the form

$$\psi = \sum_{k=1}^n a_k R^k \vartheta_k^{(1)} \quad (k = 1, 2, \dots, n) \quad (12)$$

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Disturbed motion of ...

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where a_k are arbitrary constants and ψ_k are spherical functions of the first kind. The solution (12) satisfies Eq. (10) for any a_k . The condition that the function $\Psi(R, \theta)$ should minimize (11) yields a homogeneous system of equations for the determination of a_k , the eigenvalues λ_n and the eigenfunctions ψ_n . The functions Φ_4 and Φ_5 are constructed by expansion in generalized Fourier series:

$$\Phi_4^0 = \sum_{n=1}^{\infty} \frac{C_n}{\lambda_n N_n^2} \varphi_n(x, y, z); \quad \Phi_5^0 = - \sum_{n=1}^{\infty} \frac{D_n}{\lambda_n N_n^2} \varphi_n(x, y, z),$$

$$C_n = \iint_S z \varphi_n^* dS, \quad D_n = \iint_S y \varphi_n^* dS, \quad N_n^2 = \iint_S \varphi_n^* dS, \quad \varphi_n^* = \varphi_n(x_0 + h, y, z).$$

(13)

The equations for the disturbed motion body-liquid, can be obtained
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Disturbed motion of ...

by the theorems on the change in the quantity of motion and the kinetic moment of the system body-liquid, in conjunction with the dynamic condition on the free surface:

$$\frac{\partial^2 \bar{\theta}}{\partial t^2} = -j \left(\frac{\partial \bar{\theta}}{\partial x} - \xi^0 \right)$$

where

$$\xi^0 = zu_4^0 - yu_5^0 \quad (14)$$

Further, the equations of motion are set up for the case when the 2 symmetry planes of the container are also the symmetry planes of the liquid, and the point O coincides with the metacenter G. No waves arise on the free surface, on rotation about the O^*x^* -axis. The position of the metacenter is determined by the equation

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Disturbed motion of ...

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$$x_G - x_{G_0} = \frac{\rho_0 I_z}{\mu^0 + \mu} \quad (18)$$

where x_{G_0} is the coordinate of the center of mass of the system body-liquid. There are 1 figure and 6 Soviet-bloc references.

ASSOCIATION: Instytut matematyki AN USSR (Institute of Mathematics AS UkrRSR)

PRESENTED: by Academician H. M. Savin AS UkrRSR

SUBMITTED: February 16, 1961

Card 7/7

X

LUKOVSKIY, I. A.

S/021/62/000/006/006/013
D251/D308

44100
AUTHOR: Lukovs'kiy, I.O.

TITLE: The equations of perturbed motion of a solid body with a cavity which has the form of a body of revolution and which is partly filled with liquid

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 6, 1962, 749 - 753

TEXT: The author sets out an approximate method for determining the equations of motion of a solid body with a cavity in the form of an arbitrary body of revolution which is partly filled with liquid. The method is based on the potential equation of the mutual action of the liquid and solid and on consideration of the wave motion of the liquid. The functions arising in the working are expanded into a generalized Fourier series, and the solution is obtained by the usual analytic and boundary-value methods. There is 1 figure. 1/2

ASSOCIATION: Instytut matematyky AN URSR (Institute of Mathematics of the AS UkrSSR)

~~Cited 1/2~~

LUKOVSKIY, I.A. (Kiyev)

Wave motions of an ideal liquid in vessels shaped as solids of
revolution. Ukr.mat.zhur. 14 no.2:160-169 '62. (MIRA 15:11)
(Boundary value problems) (Hydrodynamics)

L 20744-66 EWT(d)/EWT(m)/ETC(m)-6/EWP(w) IJP(c) EM/KW

ACC NR: AT6010215

SOURCE CODE: UR/3187/65/000/001/0116/0123

AUTHOR: Lukovskiy, I. A.

ORG: none

TITLE: An approximate method for solving boundary-value problems in the theory of disturbed motion of bodies with cavities filled with liquid 32
B+/

SOURCE: Kiyev. Universitet. Kafedra vychislitel'noy matematiki. Vychislitel'naya matematika, no. 1, 1965, 116-123 26

TOPIC TAGS: liquid filled body, disturbed motion equation, hydrodynamic coefficient, boundary value problem, variational method

ABSTRACT: Disturbed motion of a body having a cavity partially filled with an ideal liquid is analyzed in the case when the cavity is axisymmetrical and contains radial partitions. It is considered that the problem of the motion of such a body-liquid system is solved completely when the displacement potential of the liquid particles in a particular subdivision of the cavity is determined. The displacement potential is taken in the form

$$X(x, y, z, t) = \Psi(x, y, z) \omega(t) + \sum_{n=1}^{\infty} r_n(t) \phi_n(x, y, z), \quad (1)$$

$$\Delta X = 0, \quad (2)$$

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L 20744-66

ACC NR: AT6010215

where $\phi_n(x,y,z)$ and $\Psi(x,y,z)$ are harmonic functions characterizing the wave motion of the liquid and satisfying certain boundary conditions on the wetted surface of the cavity and on the free surface of the liquid. To determine ϕ_n and Ψ , two boundary-value problems are obtained. In determining ϕ_n , it is assumed that ϕ_n can be represented in the form

$$\phi_n = f(\eta) \psi_n(x, \xi). \quad (3)$$

where x, ξ, η are cylindrical coordinates connected with variables x, y, z by certain relations. The boundary-value problem for ϕ_n is now reduced to two boundary-value problems for $f(\eta)$ and $\psi_n(x, \xi)$. The boundary-value problem for $f(\eta)$ is easily solved. A variational method is applied to determine $\psi_n(x, \xi)$. The solution of $\psi_n(x, \xi)$ is sought in the form of a sum in terms of the unknown coefficients $a_n^{(i)}$ and a certain system of functions $w_n^{(i)}(x, \xi)$. From the condition of the minimum of a certain functional, a system of algebraic equations for determining the coefficients and the equation for an approximate determination of the eigenvalues is derived from the condition for the minimum of a certain functional. The system of functions $w_n^{(i)}$ is expressed in terms of associated Legendre functions of the first kind. To determine Ψ , the method of eigenfunction expansion of boundary-value problem with the parameter in the boundary conditions is applied. The boundary-value problem for eigenvalues is obtained from which the eigenvalues and the corresponding eigenfunctions are derived

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L 20744-66

ACC NR: AT6010215

by a variational method. On the basis of the derived eigenfunctions, the harmonic function Ψ is determined. Utilizing the derived expressions for ψ_n and Ψ , the hydrodynamic coefficients of disturbed motion equations are calculated. Orig. art. has: 41 formulas and 1 figure. [LK]

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 4226

Card

3/3

L 60977-65 SWI(1)/EWP(m)/ENT(m)/EWP(w)/EWA(d)/EWA(l) Pd-1/Ps-4/Pi-4

WW/EM
ACCESSION NR: AP5019195

UR/0198/65/001/007/0101/0106

AUTHOR: Lukovskiy, I. A. (Kiev)

TITLE: Calculating the characteristics of the motion of a liquid in a cavity having the shape of the ellipsoid of revolution

SOURCE: Prikladnaya mekhanika, v. 1, no. 7, 1965, 101-106

TOPIC TAGS: fluid dynamics, liquid filled body, body motion, liquid sloshing mode

ABSTRACT: A method is presented for calculating the hydrodynamic coefficients (hydrodynamic characteristics) of equations of the perturbed motion of a body having a cavity with the shape of an ellipsoid of revolution partially filled with liquid. The hydrodynamic coefficients (m_n , u_n , M_n , I) are written in the form of certain integral relations expressed in terms of functions φ_n and ψ which characterize the wave motion and the rotational motion of a liquid. Two boundary-value problems for determining these functions are set up. Determination of φ_n is carried out under the assumption that the spectrum of free oscillations of a liquid is determined by means of a certain approximate or experimental method. The boundary-value problem for ψ is approximately solved by a variational method utilizing spherical functions for constructing the system of coordinate functions. The final expressions for hy-

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ACCESSION ER: AP5019195

hydrodynamic coefficients contain Bessel functions of the first kind and are very convenient for numerical calculations. The results of numerical calculations on electronic computers of the coefficients for the ϵ values ($\epsilon = b/a$, where a and b are the semiaxes of the ellipsoid) over the interval $0.3 \leq \epsilon \leq 2.8$ are presented. Orig. art. has: 14 formulas and 5 figures. [LK]

ASSOCIATION: Institut matematiki AN UkrSSR (Institute of Mathematics, AN UkrSSR)

SUBMITTED: 20Jul64

ENCL: 00

SUB CODE: ME

NO REF SOV: 007

OTHER: 001

ATD PRESS: 4062

2/2

KOMARENKO, A.N. (Kiyev); LUKOVSKIY, I.A. (Kiyev); FESHCHENKO, S.F. (Kiyev)

Problem involving eigenvalues with a parameter under boundary conditions. Ukr. mat. zhur. 17 no.6:22-30 '65.

(MIRA 19:1)

1. Submitted September 21, 1965.

I. 11129-66 ENT(1) IJP(c)

ACC NR AR6024057

SOURCE CODE: UR/0124/66/000/004/B064/B064

AUTHOR: Lukovskiy, I. A.

4/0
B

ORG: none

TITLE: Approximation method of determining hydromechanical coefficients of equations for the perturbed motion of a body with cavities partially filled with fluid

SOURCE: Ref. zh. Mekhanika, Abs. 4B426

REF SOURCE: Gidraeromekhanika. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 62-72

TOPIC TAGS: approximation method, hydromechanic coefficient, perturbed motion, motion equation, fluid mechanics, axisymmetric cavity

ABSTRACT: Problems under consideration in this paper are analogous to those already investigated by the author in a previous article [see Ref. zh Mekhanika, Abs. 4B425]. In the present paper the author assumes that an axisymmetric cavity

Card 1/2

L 14129-66

ACC NR: AR6024057

containing a fluid is not divided by partitions. Bibliography of 10 titles. A. A. Petrov. [Translation of abstract] [AM]

SUB CODE: 12, 20/

LS

Card 2/2

L 45963-66 EWT(1)/EWP(m) WW
ACC NR: AT6025831 (N) SOURCE CODE: UR/3207/65/000/001/0053,0061

AUTHOR: Lukovskiy, I. A.

ORG: Institute of Mathematics, AN UkrSSR, Kiev (Institut matematiki AN UkrSSR)

TITLE: Determining the hydrodynamic characteristics of disturbed motion of a solid body with cavities separated by radial partitions and partially filled with liquid

SOURCE: Gidroaeromekhanika (Hydroaeromechanics), no. 1, Kharkov, Izd-vo Khar'kovskogo univ., 1965, 53-61

TOPIC TAGS: hydrodynamic theory, motion mechanics, shell theory

ABSTRACT: The author considers disturbed motion of a solid with a cavity which is partially filled with liquid. Disturbed motion is defined as motion of the coordinate system $Oxyz$ rigidly fixed with respect to the solid relative to a second coordinate system $O^*x^*y^*z^*$ moving according to a given law in a potential field of body forces. The volume of liquid is bounded by its free surface S , two radial partitions S_1 and S_2 and surface of revolution S_0 (see figure). Disturbed motion of the system is characterized by the small displacement vector u and the small rotational vector $\vec{\omega}$ of the coordinate system $Oxyz$ with respect to the coordinate system $O^*x^*y^*z^*$. The following boundary equations are solved for the harmonic vector functions ϕ , ψ and ϕ_n :

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ACC NR: AT6025831

$$\frac{\partial \vec{\phi}}{\partial \nu} = \vec{v} \text{ on } \Sigma + S,$$

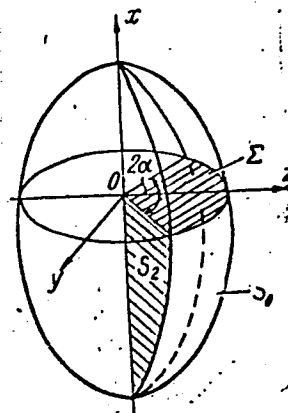
$$\frac{\partial \vec{\psi}}{\partial \nu} = \vec{R} \times \vec{v} \text{ on } S,$$

$$\frac{\partial \vec{\psi}}{\partial \nu} = 0 \text{ on } \Sigma,$$

$$\frac{\partial \vec{\psi}_n}{\partial \nu} = 0 \text{ on } S,$$

$$\frac{\partial \vec{\psi}_n}{\partial \nu} = \lambda_n \vec{v}_n \text{ on } \Sigma,$$

where $\vec{v}$ is the unit vector of the external normal to the surface bounding the given volume of liquid and $S=S_1+S_2+S_0$. The hydrodynamic coefficients are determined for the equations of disturbed motion of the system in planes Oxy and Oxz , and also during motion with respect to the axis of symmetry of the cavity. The methods considered for solving the boundary problems may be used for studying disturbed motion of a solid body with cavities of various geometric shape (sphere, cone, ellipsoid of revolution, etc.). Orig. art. has: 1 figure, 54 formulas.



SUB CODE: 20/ SUBM DATE: None/ ORIG REF: 005

Card 2/2 hs

LUKOVSKIY, IGOR V

POYEZD IDET DAL'SHE; P'YESA V ODNOM DEYSTVII, MOSKVA, ISKUSSTVO, 1950.
15 p.

(ODNOAKTNYYE P'YESY)

LUKOVSKIY, L. A.

Prof., Otorhinolaryngological(ORL) Dept., Dnepropetrovsk Hosp., Stalinsk
Railroad, 1948.

Medicine. "Irritative Contusive Infection of the Ear According to the Data of a
Front Line Hospital,"

SO: Vest. Oto-rinolaringol., No. 2, 1948.,

"Case of Thrombosis in the Chest Cavity Complicated with Diffused Purulent
Leptomeningitis with Suppuration During the Healing Period."

SO: Vest. Oto-rinolaringol., No. 4, 1948.

LUKOVSKIY, L.A., professor (Dnepropetrovsk)

Some remarks on the nomenclature and classification of oto-
laryngological diseases. Vest. oto-rin. 16 no.6:50-55 H-D '54.
(OTORHINOLARYNGOLOGY (MLRA 8:1)
dis., classif. & nomenclature)
(NOMENCLATURE
otorhinolaryngol. dis.)

LUKOVSKIY, L.A., professor

Etiology and pathogenesis of chronic tonsillitis and of its exacerbation. (secondary anginas). Vest. oto-rin. 17 no. 2:3-10 Mr-Apr '55. (MIRA 8:7)

1. Iz kliniki bolezney ukha, gorla i nosa Dnepropetrovskogo meditsinskogo instituta.
(TONSILLITIS,
pathogen. & acute forms)

LUKOVSKIY, L.A., professor.

"Chronic tonsillitis and its relationship to other diseases."
B.S.Preobrazhenskii. Reviewed by L.A.Lukovskii. Vest.oto-rin
17 no.4:76-78 J1-Ag '55. (MLRA 8:10)
(TONSILS-DISEASES) (PREOBRAZHENSKII, B.S.)

EXCERPTA MEDICA Sec 11 Vol.11/6 O.R.L. June 58

LUKOVSKIY, L.A.

963. CHRONIC TONSILLITIS AND ITS IMPORTANCE IN THE PATHOGENESIS OF RHEUMATISM (Russian text)- Lukovski L. A. - TRUD. II. SEZDA VRAC.-PEDIAT. USSR 1956 (256-260)

Eighty-four patients with chronic tonsillitis and rheumatism underwent tonsillectomy after the attack and were followed up for 1-5 yr. after the operation. Fifty-three recovered, 27 showed considerable improvement, and 4 showed no effect. Optimal results were obtained in cases where tonsillectomy was carried out in the early stages (first year) of the disease. Hygiene of mouth and tonsils is most important in the prophylaxis and treatment of rheumatism in childhood. (S)

LUKOVSKIY, L.A.
LUKOVSKIY, L.A., prof.; KOS'KO-MOSINA, N.K., dots.

Vitamin B₁ metabolism in chronic tonsillitis. Vrach.delo no.10:
1091-1093¹0 '57. (MIRA 10:12)

1. Otolaringologicheskaya klinika (zav. - prof. L.A.Lukovskiy)
i klinika gosspital'noy terapii (zav. - prof. I.S.Slutskiy)
Dnepropetrovskogo meditsinskogo instituta.
(THIAMINE) (TONSILS--DISEASES)

LUKOVSKIY, L.A., professor (Dnepropetrovsk)

New developments in the treatment and prevention of otolaryngological diseases; an aid to the laryngologist lecturer. Vest.oto-rin. 19
no.2:99-105 Mr-Apr '57. (MIRA 10:6)

(EAR, dis.

prev. & ther., review (Rus))

(LARYNX, dis.

same)

LUKOVSKIY, L.A., zasluzhennyy deyatel' nauki prof.

Conservative methods for the treatment of chronic tonsillitis.
Zhur. ush., nos. i gorl. bol. 20 no.5:73-75 8-0 '60. (MIRA 14:6)

1. Otorinolaringologicheskaya klinika Dnepropetrovskogo meditsinskogo instituta.
(TONSILS--DISEASES)

LUKOVSKIY, L.A., prof., zasluzhennyi deyatel' nauki USSR (Dnepropetrovsk)

Tasks and ways in the further study of the problem of chronic
tonsillitis. Zhur. ushl, nos. i gorl. bol. 21 no.2:3-8 Mr-Apr
'61. (MIRA 14:6)

(TONSILS—DISEASES)

LUKOVSKIY, L.A., zasluzhennyy deyatel' nauki, prof. (Dnepropetrovsk)

Surgical methods of treating chronic tonsillitis. Zhur.ush., nos.
1 gorl.bol. 21 no.6:73-76 N-D '61. (MIRA 15:11)
(TONSILS--SURGERY)

LUKOVSKIY, L.A., zasluzhennyy deyatel' nauki prof.; ZVIZHULEVA, V.Ya.,
vrach-logoped

Review of N.A.Omel'chenko's book "Defective speech and its
connection with anomalies of the maxillodental system and
hearing". Zhur.ush. nos. i gorl. bol.23. no.2:85-86 Mr-Apr'63.
(SPEECH, DISORDERS, OF) (STOMATOLOGY) (MIRA 16:8)
(EAR-DISEASES)

KOLOMIYCHENKO, A.I., prof., Laureat Leninskoy premii, zasl. deyatel' nauki, red.; LUKOVSKIY, L.A., prof., red.; ZARITSKIY, L.A., prof., zasl. deyatel' nauki, red.; PITENKO, N.F., prof., red.; GLADKOV, A.A., prof., red.; KURILIN, I.A., prof., red.; MOSTOVOY, S.I., doktor med. nauk, red.; BARLYAK, R.A., prof., red.; SHPARENKO, B.A., dots., red.; ROZENGAUZ, D.Ye., dots., red.; KHARSHAK, B.M., dots., red.; CHERNOVA, I.A., kand.med. nauk, red.

[Current problems of clinical and experimental otolaryngology]
Aktual'nye voprosy kliniko-eksperimental'noi otolaringologii.
Kiev, Zdorov'ia, 1964. 350 p. (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut otalaringologii. 2. Otdel profpatologii Nauchno-issledovatel'skogo instituta otolaringologii (for Pitenko).

LUKOVSKIY, R.V. (Leningrad, D-28, ul. Saltykov-Shchedrin, Leningrad)

Examination of the esophagus in children under intratracheal
anesthesia. Vest. khir. 92 no.2:76-77 F '64.

(MIRA 17:9)

1. Iz otorinolaringologicheskoy kliniki (zav.-prof. S.S. Grobshteyn)
Leningradskogo pediatricheskogo meditsinskogo instituta.

BATROVA, V.S. (Leningrad, S-167, Ispolkomskaya ul., d.7, kv.4); LUKOVSKIY,
R.V.

Intratracheal nitrous oxide anesthesia in newborn infants and chil-
dren. Vest. khir. 90 no.5:100-104 My'63 (MIRA 17:5)

USSR/Human and Animal Physiology (Normal and Pathological)
Sense Organs. Vision.

T

Abs Jour : Ref Zhur Biol., No 6, 1959, 27096

Author : Lukovskiy, S.A.

Inst : -

Title : On Basic Functions of the Organ of Vision in Pilots in
Simple and Complex Meteorological Conditions.

Orig Pub : Voen.-med. zh., 1957, No 11, 56-59

Abstract : In 20 pilots with emmetropia, the position of the near
and far points of binocular vision (NP, FP) and refraction
were determined before and after flying under various
conditions. Three phases of dynamics of accommodation
were discovered: working in (nearing of NP), stabilization
and exhaustion (removal of NP and drawing near of FP).
In 11 pilots, after flying, nearsightedness was discovered
to 0.5 D (in the rest the change of refraction was not
determined). Shifts of indexes after flying

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USSR/Human and Animal Physiology (Normal and Pathological)
Sense Organs. Vision

T

Abs Jour : Ref Zhur Biol., No 6, 1959, 27096

under complex meteorological conditions were more expressed than under simple conditions. The author proposes the utilization of investigation of the indicated functions as an additional method in establishing a regimen of flying work.

Card 2/2

LUKOVSKIY, S.A., podpolkovnik meditsinskoy sluzhby

Studying night vision with the Kravkov-Vishnevskii apparatus by
exposing a previously adapted eye to light for two minutes. Oft.
zhur. 12 no.1:25-30 '57. (MLRA 10:8)
(NIGHT VISION)

LUKOVSKIY, Ye. A.

The Principles of Optics, Elementary Illumination Engineering (Osnovy optiki, Nachala svetotekhniki), Voennoye izd (Military Publishing House), 1949, 344 pp.

LUKOVSKIY, Yu. [Lukovs'kiy, IU.], inzh.; ZEMBITSKIY, B. [Zembyts'kiy, B.], inzh.;
AKININ, P., inzh.; RUTUS, N., inzh.; GINDIS, Ya. [Hindis, IA.], inzh.;
YERIKHEMZON, L., inzh.

Determination of the optimum program of automatic manipulation of
buckets containing molten slag at granulation plants. Bud. mat. i
konstr. 4 no.1:5-7 Ja-F '62. (MIRA 15:7)
(Zhdanov—Slag)

LUKOVSKY, Miroslav

Effect of dirt on the electrolytes of lead accumulators.
Elektrotechnik 17 no.2:42-43 F '62.

LUKOVSKY, Miroslav

Connection welding cable lugs of arc welders. Elektrotechnik
18 no. 12:364 D '63.

LUKOVSKY, O.

Operational tests of spray pipes with self-cleaning rubber
nozzles. Papir a celuloza 19 nc.11:307 N '64.

1. Zapadoceske papirny, Plant Merklin.

LUKOVITSEV, A. A.

Remont zavodskogo oborudovaniia (Repair of plant equipment). Sverdlovsk, Mashgiz, 1952.
336 p.

SO: Monthly List of Russian Accessions, Vol 6, No. 3, June 1953

LUKOVITSEV, Aleksey Alekseyevich; MURAV'YEV, K.N., inzhener, retsenzent;
KONYUKHOV, S.M., dotsent, redaktor; GRISHCHENKO, M.F., inzhener
redaktor; DUGINA, E.A., tekhnicheskii redaktor. (MIRA 9:6)

[Assembling mechanical equipment] Montazh mekhanicheskogo obru-
dovaniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry,
1955. 540 p. (Machinery) (MIRA 9:6)

14(10)

PHASE I BOOK EXPLOITATION

SOV/1633

Lukovtsev, Aleksey Alekseyevich

Ratsional'nyye sposoby ustanovki mashin na fundamentakh (Efficient Method of Mounting Machines on Foundations) Moscow, Mashgiz, 1958. 58 p. (Series: Biblioteka slesarya-montazhnika, vyp. 1) 10,000 copies printed.

Ed. of Publishing House: M.I. Sustavov; Tech. Ed.: N.A. Dugina;
Editorial Board of Series: S.N. Gorshkov, Engineer, A.A. Lukovtsev, Engineer, P.Z. Petukhov, Doctor of Technical Sciences, S.N. Rudin, Engineer, M.I. Sustavov, Engineer, M.I. Khrisanov, Candidate of Technical Sciences.

PURPOSE: The pamphlet is intended for personnel engaged in installing industrial equipment.

COVERAGE: This pamphlet describes in some detail methods of installing, aligning, and centering industrial machinery and equipment on foundations and presents other related data and reference material

Card 1/4

Efficient Method of Mounting (Cont.)

SOV/1633

considered essential to personnel engaged in installing operations. Data included cover: types of foundations, installation and centering of machinery and equipment, bolting of equipment to foundations, and ways and means of decreasing the extent of vibrations. There are no references, and no personalities are mentioned.

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Efficient Method of Mounting (Cont.)

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Ch. VI. Decreasing the Vibration of Machines on Foundations

53

Purpose of vibration-stable designs

54

Methods of damping vibrations

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AVAILABLE: Library of Congress (TJ249.L82)

JG/jmr

6-25-59

Card 4/4

KORMAN, Al'fred Genrikhovich; KUZNETSOV, A.V., inzh., red.; LUKOVITSEV, A.A., inzh., red.; PETUKHOV, P.Z., doktor tekhn. nauk, red.; RUDIN, S.N., inzh., red.; SUSTAVOV, M.I., inzh., red.; KHRISANOV, M.I., kand. tekhn. nauk, red.; DUGINA, N.A., tekhn. red.

[Mechanization of assembly work] Mekhanizatsiia montazhnykh rabot.
Moskva, Mashgiz, 1960. 100 p. (Biblioteka slesaria-montazhnika, no.3)
(MIRA 14:11)

(Machine-shop practice)

MASLOV, Vyacheslav Andrianovich; LUKOVSEV, A.A., inzh.; red.; PETUKHOV, P.Z., doktor tekhn.nauk, red.; RUDIN, S.I., inzh., red.; SUSTAVOV, M.I., inzh., red.; KHRISANOV, M.I., kand.tekhn.nauk, red.; SARAFANNIKOVA, G.A., red.izd-v2; MARCHENKOV, I.A., tekhn.red.

[Increasing labor productivity in assembling mechanical equipment]
Povyshenie proizvoditel'nosti truda na montazhe mekhanicheskogo
oborudovaniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.
lit-ry, 1960. 105 p. (Bibliotekha slesaria-montazhnika, no.10).
(MIRA 14:2)

(Machine-shop practice)

RUDIN, Sil'vestr Nikolayevich, inzh.; LUKOVTSY, A.A., inzh., red.;
PETUKHOV, P.Z., doktor tekhn.nauk, red.; RYABOV, A.N., inzh., red.;
SUSTAVOV, M.I., inzh., red.; KHRISANOV, M.I., kand.tekhn.nauk,
red.; SARAFANNIKOVA, G.A., red.; DUGINA, N.A., tekhn.red.

[Assembly tools] Montazhnye instrumenty. Moskva, Gos.nauchno-tekhn.
izd-vo mashinostroit.lit-ry, 1960. 127 p. (Bibliotekha slesaria-
montazhnika, no.7). (MIRA 14:2)

(Machinists' tools)

NEYMAN, Vladimir Aleksandrovich; GORSHKOV, S.N., inzh., red.; LUKOVTSY,
A.A., inzh., red.; PETUKHOV, P.Z., doktor tekhn.nauk, red.;
RUDIN, S.N., inzh., red.; SUSTAVOV, M.I., inzh., red.; KHRISANOV,
M.I., kand.tekhn.nauk, red.; MAKAROV, Ye.M., red.izd-va;
DUGINA, N.A., tekhn.red.

[Assembling centralized lubrication systems] Montazh tsentrali-
zovannykh smazochnykh sistem. Moskva, Gos.nauchno-tekhn.izd-vo
mashinostroit.lit-ry, 1960. 109 p. (Biblioteka slesaria-montazhni-
ka, vypusk 8). (MIRA 14:1)

(Lubrication and lubricants)

KONONOV, Yuriy Veniaminovich; NIKIFOROV, Aleksey Semenovich; LUKOVITSEV, A.A., inzh., red.; PETUKHOV, P.Z., doktor tekhn.nauk, red.; RUDIN, S.N., inzh., red.; SUSTAVOV, M.I., inzh., red.; KHRISANOV, M.I., kand.tekhn.nauk, red.; SHABASHOV, P.A., kand. tekhn.nauk, red.; BEZUKLADNIKOV, M.A., red.izd-va; DUGINA, N.A., tekhn.red.

[Improvements in the technique of assembling bridge cranes]
Usovershenstvovaniia v tekhnologii sborki mostovykh kranov.
Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961.
90 p. (Biblioteka slesaria-montazhnika, no.5).

(MIRA 14:7)

(Cranes, derricks, etc.)

LUKOVITSEV, Aleksey Alekseyevich; PETUKHOV, P.Z., doktor tekhn. nauk,
red.; RUDIN, S.N., inzh., red.; SUSTAVOV, M.I., inzh., red.;
KHRISANOV, M.I., kand. tekhn. nauk, red.; DUGINA, N.A.,
tekhn. red.

[Efficient methods for installing machines on a foundation]
Ratsional'nye sposoby ustanovki mashin na fundament. Izd.2.
Moskva, Mashgiz, 1962. 53 p. (MIRA 16:1)
(Machinery--Foundations)

LUKOVITSEV,
BC

Hydrogen overvoltage on nickel. P. LUKOVICH, S. LEVINA, and A. FRUMKIN (Acta Physicochim. U.R.S.S., 1939, 11, 21—44; cf. A., 1938, 1, 201).—The H overvoltage on Ni has been investigated in solutions of HCl from 0.15 to 0.003*N.*, and of NaOH from 8.8 to 0.001*N.*, at *o.d.* from 1×10^{-2} to 5×10^{-4} amp. per sq. cm. and the effect of neutral salts studied. The anodic polarisation of Ni in a H_2 atm. has been investigated in the same NaOH solutions. The results for overvoltage agree with Tafel's equation. Results are interpreted on the theory of the slow discharge of ions at the electrode. O. D. S.

O. D. S.

LUKOVITSEV, P.

600

1. LUKOVITSEV, P.; LEVINA, S.; Frumkin, A.

2. USSR (600)

"The Supertension (Perenapryazheniye) of Hydrogen over Nickel, "Zhur. Fiz. Khim., 13, No. 7, 1939 Moscow Physico-Chemical Institute imeni L. Ya. Karpov, Lab of Superficial Phenomena. Received 29 December 1938.

9.  Report U-1615, 3 Jan. 1952.

TEST AND PROPERTIES INDEX		PROCESSES AND PROPERTIES INDEX	
Theory of the hydrogen overvoltage. P. D. Lukovtsev (Karpov Inst. Phys. Chem., Moscow). <i>J. Phys. Chem. (U.S.S.R.)</i> 21, 569-68(1947)(in Russian).—Equations for overvoltage are derived by assuming that the desorption of H occurs simultaneously by two processes (combination of 2 adsorbed H atoms and reaction of an adsorbed H with H*) and that the probability of each process depends on the inhomogeneity of the solid surface. When specific assumptions concerning this inhomogeneity and the relative rate of various processes are made, relations can be derived between overvoltage, c.d., the nature of the electrolyte, etc. J. J. Bickerman		4	
ASH-31A METALLURGICAL LITERATURE CLASSIFICATION			
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SECTION 3: METALLURGICAL LITERATURE CLASSIFICATION		SECTION 4: METALLURGICAL LITERATURE CLASSIFICATION	

LUKOVTSOV, P. D.

PA-2T53

Mar 1947

USSR/Physical Chemistry Electrodes - Carbon - Manganese Oxygen

"The Influence of Absorbed Oxygen on the Potential and Kinetics of Discharge of the Carbon-Manganese Oxide Electrode," N S Krivolutsкая, S A Temerin, and P D Lukovtsov, 12 pp

"Zhurn Fiz Khim" Vol XXI, No 3

Experimental data leading to the conclusion the potential of the oxide carbon-manganese electrode, measured in the air, is stationary and not equilibril.

LUKOVTSSEV, P. D.

FA 14T91

USSR/Electrodes
Carbon

Apr 1947

"The Mechanism of the Action of the Carbon-manganese
Oxide Electrode," P. D. Lukovtsev, 9 pp

"Zhur Fiz Khim" Vol XXI, No 4

Technical account of the experiment, the effect
of the composition of the gas phase, the effect
of the pH electrolyte, and results. The potentials
of subject electrodes are determined from various
samples of MnO_2 in 4 normal solution of $(NH_4)_2SO_4$
in relation to the pH electrolyte. An explanation
of the obtained experimental results is given on the
basis of the stationary potential of subject of
electrode.

14T91

LUKOVTSSEV, P.

PA 18T95

USSR/Chemistry - Hydrogen
Chemistry - Overvoltage

May 1947

"The Overvoltage of Hydrogen on Nickel in Alkali
Solutions," P. Lukovtsev, S. Levinza, 12 pp

"Zhur Fiz Khim" Vol XXI, No 5

Describes, with graphs and figures, the experiments
conducted, which showed that in a relatively strong
solution of NaOH the overvoltage depends on the
equation $\eta = a + b \lg i$ and depends greatly on the con-
centration of the solution; therefore, the form and
state of the cathode has little effect on experimental
results. Published 31 Oct 1946. Physical-Chemical
Institute, imeni L. Ya. Karpov, Moscow.

18T95

LUKEVTSEV, P. D.

PA 18T94

USSR/Chemistry - Hydrogen
Chemistry - Overvoltage

May 1947

"The Theory of the Hydrogen Overvoltage," P. D.
Lukevtsev, 10 pp

"Zhur Fiz Khim" Vol XXI, No 5

Explains the theory, with illustrations, by means of
results of investigating the equalizing of the hy-
drogen overvoltage where the reaction goes along two
routes with equal speeds and the resulting con-
sequences of this equating in particular occurrences.
Published 31 Oct 1946. Physical-Chemical Institute,
Imeni L. Ya. Karpov, Moscow.

18T94

LUKOVTSSEV, P. D.

Defended his Dissertation for Doctor of Chemical Sciences, Institute of Physical Chemistry, Academy of Sciences, USSR, Moscow, 1953

Dissertation: "Electrochemical Behavior of Oxide Electrodes of Some Chemical Sources of Current"

SO: Referativnyy Zhurnal Khimii, No. 1, Oct. 1953 (W/29955, 26 Apr 54)

DOLIN, P.I.; LOSEV, V.V.; LUKOVTSSEV, P.D.; MEDVEDOVSKIY, P.D.

Letter to the Editor. Usp.khim. 22 no.6:775-776 Je '53. (MLRA 6:5)
(Electrochemistry--History)

LUKOVITSEY, P. D.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Electrochemistry

④ *Chem. electrochem.*
The mechanism of hydrogen overvoltage on metals which readily adsorb hydrogen. P. D. Lukovitsy, *Zhur. Fiz. Khim.* 27, 1245-50 (1953). Contrary to Khrapov (C.A. 47, 4767c), the rate of liberation of H_2 on Ni and similar electrodes is not detd. only by the slow recombination of H atoms. The results of electrochem. reduction of various compds. cannot be used to det. the mechanism of overvoltage. J. J. Bickerman

9-2-54
JJP

LUKOVTSEY, P. D.

Jan 18 / 1954
ElectrochemistryCATALYSTS

(CA 48 no. 1:55 54)

The mechanism of the electrochemical reduction of solid oxides at a mercury cathode. P. D. Lukovtsey, *Doklady Akad. Nauk S.S.S.R.* 88, 876-8 (1953). The cathodic polarization of a stationary Hg pool (12.6 sq. cm. area) and a vertical amalgamated Cu rod (3.6 mm. diam., 15 mm. immersed) was measured in 1N H₂SO₄ with a H atm. Suspensions of WO₃ or MnO₂ in the same acid were then added to the cathode chamber and the curves remeasured. For the Hg pool alone, the H overvoltage was (I): $\eta = 1.48 + 0.12 \log i$ ($i = \text{c.d.}$); after adding WO₃ the curve became (II): $\eta = 0.80 + 0.09 \log i$. Introducing MnO₂ at 1×10^{-4} amp./sq. cm. did not affect I, but at lower currents the potential rose to that of the Hg-HgSO₄ half-cell (approx. +0.65 v., H scale). The potential remained at this value from 4×10^{-4} to 4×10^{-3} amp./sq. cm. but then dropped sharply at higher currents and returned to I. Lowering the current to 2×10^{-4} amp./sq. cm. caused a new rise to +0.65 v. With amalgamated Cu the steep potential changes with MnO₂ present essentially coincided at 1×10^{-4} amp./sq. cm. Below this, the potential was +0.14, H scale. The overvoltage without addns. was $\eta = 1.40 + 0.12 \log i$, while II again resulted with WO₃. The efficiency of reduction of WO₃ decreased with i . The observed effect resulted from a neg. charge on the MnO₂ particles with reduced oxide dissolving to Mn⁺⁺. H evolution was catalyzed by WO₃, which formed W₂O₅. Reduction of both oxides occurred by direct acceptance of electrons in accordance with the views of Frumkin, et al. (C.A. 41, 6476e). At. H was not involved as proposed by Kobzev and Monblatova (C.A. 43, 2874e). R. D. Miskin

①

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8-21-54
2874e

LUKOVITSEV, P. D.

AID P - 272

Subject : USSR/Chemistry
Card : 1/1
Authors : Kabanov, B. N. and P. D. Lukovtsev
Title : Letter to the Editor
Periodical : Usp. khim. 23, No. 3, 397-400, 1954
Abstract : Critical review of a textbook of theoretical electro-chemistry: "Course in Theoretical Electrochemistry", by N. A. Izgaryshev and S. V. Gorbachev, 1951.
Institution : None
Submitted : No date

LUKOVITSEV, P. D.

USSR/Chemistry

Card 1/1

Authors : Kocherginskiy, M. D., and Lukovtsev, P. D.

Title : Polarization of a Porous Manganese Oxide Electrode made of a Manganese-Zinc Element.

Periodical : Zhur. Fiz. Khim. Vol. 28, Ed. 4, 661-670, Apr 1954

Abstract : Experimental methods used for measuring the potential of manganese dioxide, and the drop involtage in cells and a porous manganic oxide electrode, and calculations for a uniform distribution of voltage in manganese-zinc agglomerates. Nine references; tables; graphs.

Institution :

Submitted : June 16, 1953

KOCHERGINSKIY, M.D.; ~~LUKOVITSEV, P.D.~~

Reply to G.G. Coleman. Zhur.fiz.khim. 29 no.7:1325 J1 '55.
(MLRA 9:3)

(Electrodes) (Coleman, G.G.)

Kukovtsev, P. D.

✓ The Mechanism of Hydrogen Overvoltage on Nickel,
Platinum and Other Metals. L. D. Lukatskaya and P. D.
Kukovtsev. *Proc. Acad. Sci. USSR, Div. Chem. Sci.* 1972, 23, 1000-1004. 10 refs.
H overvoltage against the background of the overvoltage of the cathodic reduction of the
hydrogen ions. The authors consider the mechanism of the overvoltage of the hydrogen ions
on the basis of the experimental results. A. considers that the mechanism of retarded
discharge for the H overvoltage on Ni and Pt is not true. L. and L. quote bibliographically the accumulation of data in
favour of such a mechanism. 35 refs. A. V.

PM not

LUKOVITSEV, P. D.
~~KREVOLOPOVA, YE. V.~~

PHASE I BOOK EXPLOITATION SOV/2216

- Izveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...i [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.
Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A. M. Frumkin (Resp. Ed.), Academician, O. A. Yastin, Professor, S. I. Zhdanov (Resp. Secretary), B. N. Kabanov, Professor, S. I. Zhdanov (Resp. Secretary), B. M. Kabanov, Professor, M. M. Kolyvyrkin, Doctor of Chemical Sciences, V. V. Losav, P. D. Lukatskaya, Professor, Z. A. Solov'yeva, V. V. Stender, Professor, and O. M. Florinatskaya, Ed. of Publishing House: N. G. Yegorov, Tech. Ed.: Z. A. Prusakov.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE]. The book contains 127 of the 138 reports presented at the fourth conference on Electrochemistry, sponsored by the Department of Chemistry and the American Chemical Society, at the University of California, San Diego, in 1978. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodeposition and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

A.A. Zhdanova-Ozarkiy-Polytechnic Institute Imeni A.A. Zhdanov). Influence of Aging Processes on the Work of Alkaline-Zinc Elements

Lukortsev, P.D.	Theory of Processes Occurring at Oxide electrodes of Chemical Sources of Current	773
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Rozentsveyg, S.A., and V.I. Levina Mechanism of the Activation of an Iron Electrode With Small Additions of Nickel Oxides

Salashova, M.A., V.A. Ivanov, and L.D. Kovba (Institute of Electrochemistry, Academy of Sciences, USSR), Using Tagged Atoms to Study Processes in Chemical Sources of Current 788

Daniyel'-Bek, V. S., M. Z. Mintz, V. Y. Syrovaya, and M. V. Vukhova (Nauchnoissledovatel'skiy institut Gorodskoy i sel'skoy svyazi Ministerstva svyazi SSSR - Scientific Research Institute of Rural and Urban Communications, Ministry of Communications, USSR). Investigation of Fuel

FRUMKIN, A.N., akademik; LUKOVITSEV, P.D., doktor khim. nauk

Present state of knowledge of the mechanism of electrode processes.
Khim. nauka i prom. 3 no.4:410-417 '58. (MIRA 11:10)

(Chemical reaction, Rate of) (Electrochemistry)

S/080/60/033/007/008/020
A003/A001AUTHORS: Romanov, V. V., Lukovtsev, P. D., Kharchenko, G. N., Sandler, P. I.TITLE: The Nickel-Zinc Storage Cell ²⁹

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1556-1563

TEXT: The results of investigations into the properties of a nickel-zinc storage cell with insoluble zinc electrode were presented and an evaluation of this type of storage cell compared to other alkali storage cells ⁴ is given. The oxide-zinc electrodes were porous plates made by sintering powder-like nickel. The pores were filled with Ni(OH)_2 . The negative electrodes were plates pressed from a mixture of zinc oxide with spongy zinc and an addition of starch. The cell was filled with a solution of caustic soda with a density of 1.30 and an addition of 10 g/l lithium hydroxide. The voltage during charging of the cell varied from 1.75-2.1 v, during 8-hour discharging from 1.8-1.5 v. The capacity of the cell decreases with an increase in the intensity of the discharge current according to Morozov's formula (Ref. 5). With a lowering of the temperature the capacity and the voltage decrease noticeably attaining at -10°C only 50% of the value at room temperature. At -40°C zinc-nickel cells break down. The average

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The Nickel-Zinc Storage Cell

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A003/A001

self-discharge per day attains 2%. After 24-70 cycles of charging and discharging the capacity decreases and finally the cells break down completely. The cause of the breakdown is the destruction of the separation film between the electrodes and the formation of zinc dendrites. Nickel-zinc storage cells hold an intermediate position between cadmium-nickel and silver-zinc storage cells as to specific energy which is lower than that of CUH-12 (STsD-12) silver-zinc cells, but 40-50% higher than that of cadmium-nickel cells. Their life, preservation in the filled state and efficiency at low temperature, however, is considerably inferior to cadmium-nickel cells. The self-discharge is determined by the self-discharge of the zinc electrode. An investigation carried out by the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR) makes it probable that the high self-discharge is due to small amounts of cobalt introduced into the positive electrode as activating additive. Nickel-zinc storage cells can be used only in those cases, in which the requirements concerning life, preservation and efficiency at low temperatures are only moderate. There are 5 graphs, 2 tables, 1 diagram and 6 references: 4 Soviet, 1 English and 1 German.

SUBMITTED: September 14, 1959

Card 2/2

MARTINYUK, G.A.; LUKOVTSSEV, P.D.

Cathodic behavior of manganese dioxide and lead dioxide in solution
and in fused alkalis. Zhur. prikl. khim. 33 no.9:2063-2070 S '60.
(MIRA 13:10)

(Manganese oxide) (Lead oxide)
(Reduction, Electrolytic)